

An Assessment of Wine Knowledge Amongst Global Consumers

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Abstract

Purpose – The importance of product class knowledge is well documented in consumer behaviour literature. The purpose of this study is to assess the knowledge of consumers in New Zealand, Australia, the UK and USA as it pertains to the specific product class of wine.

Design/methodology/approach – The authors adapted or introduced tests to analyse consumer objective knowledge, subjective knowledge and familiarity with the product class of wine. Interviewer administered questionnaires were completed with 399 respondents inside supermarkets, general liquor stores and specialty wine stores in New Zealand, Australia, the UK and USA.

Findings – The research found a positive correlation between subjective and objective knowledge, and another between familiarity and objective knowledge. Actual wine knowledge was found to be higher amongst Australian consumers than those from the other nations. Objective knowledge was also found to have significant relationships with gender, education and store choice.

Research implications – The findings suggest practical implications for wine producers and marketers in terms of segmenting the market or successfully appealing to consumers based on their level of wine knowledge.

Originality/value – The authors extended earlier product class knowledge research by examining wine consumers in multiple countries with regards to objective knowledge, subjective knowledge and familiarity.

Key words – product class knowledge, consumer behaviour, wine

Introduction

Product knowledge is an important and much studied area of consumer behaviour research. Previous studies have found that expert and novice consumers vary in the amount, content and organisation of their knowledge and as a result of this they display differing behaviours when performing product-related tasks (Philippe & Ngobo, 1999). Product knowledge is of importance because it has been found to affect the entire consumer decision making process (Scribner & Weun, 2000).

This multi-national study aimed to understand consumer product class knowledge as it applied to the specific product of wine. In particular, the nature of the relationships between the objective knowledge, subjective knowledge and familiarity constructs were explored. The relationship between objective product knowledge and variables such as nationality, gender, education and store type were also analysed. The limitations of this study and the practical implications for wine marketers are explored in this article.

Review of Literature

Consumer Product Class Knowledge

Consumer product knowledge has generally been accepted to consist of three distinct constructs; subjective knowledge, objective knowledge and familiarity (Brucks, 1985). Subjective knowledge can be thought of as being what a consumer thinks he or she knows, whilst objective knowledge is his or her actual knowledge about a product. In a similar vein, others have suggested that objective knowledge is accurate information about a product class that is stored in a consumer's long-term memory, with subjective knowledge being a consumer's perception of what or how much they know about a product class (Park,

Mothersbaugh, & Feick, 1994). Familiarity has been defined as “the number of product-related experiences accumulated by a consumer” (Rao & Monroe, 1988). Other authors have suggested that consumer knowledge can be split into just two broad categories; familiarity and expertise (Perrouy, d’Hauteville, & Lockshin, 2006). Familiarity “represents the accumulated number of experiences with the product”, whilst expertise is defined as “the capacity of successfully carrying out tasks linked to the product” (Perrouy, d’Hauteville, & Lockshin, 2006).

The three constructs of objective knowledge, subjective knowledge and familiarity proposed by Brucks (1985) have been used interchangeably by researchers as being equivalent measures of objective knowledge (Flynn & Goldsmith, 1999; Laroche, Cleveland, Bergeron, & Goutaland, 2003). Subjective knowledge is easier to measure, using standardised scales, than objective knowledge, which requires some sort of test particular to each product class. In addition, the development of a test to measure objective product class knowledge can, of course, never be entirely objective in itself (Brucks, 1985). For these reasons, the majority of consumer knowledge research has concentrated on subjective rather than objective knowledge. It is clear that what a consumer thinks he/she knows and what he/she actually knows are two quite different things, although both will partially arise out of product class experience (Flynn & Goldsmith, 1999). Indeed, Rao and Monroe (1988) suggested that product experience was a necessary but insufficient condition for consumer expertise. Some authors have found that subjective and objective knowledge, although conceptually distinct, are empirically correlated (Rao & Monroe, 1988). Other studies have noted that subjective knowledge appears to affect information processing in a different manner to that of objective knowledge (Brucks, 1985). Park, Mothersbaugh and Feick (1994) suggested that product experience is more strongly related to subjective knowledge than to objective knowledge, signifying that differences exist between the subjective and objective knowledge constructs of product class knowledge. The conflicting results in literature with regards to the extent of any correlation between subjective and objective knowledge, suggests that any such relationship may be applicable to some specific product classes but not to others.

There is considerable evidence to suggest that product knowledge effects consumer information processing. Several authors have noted that there is a positive relationship between knowledge and the amount of pre-purchase information search that is performed by a consumer (Lin & Chen, 2006; Philippe & Ngobo, 1999; Rao & Monroe, 1988; Scribner & Weun, 2000). In their study of Taipei consumers, Lin and Chen (2006) found that product knowledge had a significant positive impact on both information search intention and on actual purchase intention. Product information is processed in a deeper and more detailed manner by expert consumers than by novices. Perrouy, d’Hauteville and Lockshin (2006) suggested that experts used more attributes when evaluating a product than their novice counterparts, and that they do not use the same attributes when evaluating different brands. Rao and Monroe (1988) concurred with this, and also noted that the level of prior knowledge facilitated the acquisition of new information. Brucks (1985) also confirmed that objective knowledge was associated with seeking information about a greater number of attributes and with seeking less information about inappropriate alternatives for a specific usage situation. In a study of US students and a product which exhibited a price-quality association in the marketplace, Rao and Monroe (1988) found that consumers with low product familiarity used intrinsic cues to judge product quality. As the level of a consumer’s product familiarity increased, they were able to use extrinsic cues such as price, as surrogate indicators of product quality (Rao & Monroe, 1988). Research on product knowledge and its’ effect on the learning and organisation of product information, found that consumers with low product

knowledge retrieved the same set of brands, irrespective of their appropriateness for the usage situation they were facing (Cowley & Mitchell, 2003). In contrast, consumers with high product knowledge were able to retrieve those brands most appropriate for the usage situation and to vary this set of brands as the usage situation changed.

Product knowledge has been found to have a relationship with other aspects of consumer behaviour too. For instance, it has been established that the appeal of an advertisement differs with the consumer's level of product knowledge (Chuang & Tsai, 2005). Adverts which contained terminology created a better ad and brand attitude than adverts without terminology, for those consumers with low product knowledge. Conversely, adverts containing terminology were found to worsen the ad and brand attitude for those consumers with high product knowledge.

Past research has also considered the differences between males and females with respect to information processing and purchase decision-making. Evidence from one study suggests that men, rather than women, are more subjective and intuitive in their decision-making processes (Laroche, Cleveland, Bergeron, & Goutaland, 2003). Experience bolsters the confidence of men with respect to their subjective knowledge, and this in turn eases the evaluation task for them; in contrast, females directly recall past experiences when faced with an evaluation task, as well as relying upon their subjective knowledge (Laroche, Cleveland, Bergeron, & Goutaland, 2003).

Wine Knowledge

Several previous studies have measured the level of consumers' knowledge with regards to the specific product class of wine (Beverland, 2003; Mitchell & Hall, 2001; Orth, 2002; Perrouty, d'Hauteville, & Lockshin, 2006)

In a study of visitors to New Zealand wineries, Mitchell and Hall (2001) used a self-ascribed measure of wine knowledge and suggested that self assessment is commonly used to assess this construct. Respondents were asked to rate their wine knowledge using one of four categories; *advanced knowledge* if they had an international knowledge of wines and had completed one or two wine courses, *intermediate knowledge* if they knew different wine styles and could identify most of them, *basic knowledge* if they knew the names of most wine styles but could not identify differences between them, or *no prior knowledge*. The majority of respondents (51.5%) stated that they had an intermediate knowledge of wine, with only 7.6% rating their knowledge as advanced. Males and international visitors were found to be more likely to assess their wine knowledge as advanced. Several statistically significant differences between consumers with varying levels of wine knowledge were identified in this study. In particular, the frequency of wine consumption, the cellar size, the average monthly wine purchase, and the frequency of participation in wine club activities were all found to rise with increasing levels of wine knowledge. Interestingly, no significant differences were found between consumer purchasing of wine at supermarkets or general liquor stores and their level of wine knowledge, suggesting that both novices and experts are just as likely to purchase in these locations. In contrast, consumers with greater knowledge were significantly more likely to purchase from specialist wine stores, cellar doors, or mail order sites.

Orth (2002) found that less experienced Czech wine consumers (i.e. less knowledgeable) consumers were more likely to utilise medals displayed on bottles as a cue when purchasing wine. In particular, these consumers employed the medals attribute as a means to conveniently and quickly identify those wines which were good value for money. The author

suggested that awards can be used by marketers to target those wine consumers with less experience.

Using an intercept method, Beverland (2003) surveyed consumers outside stores in the New Zealand city of Auckland. A significant relationship was found between the level of the consumer's wine knowledge and their monthly spend on wine, suggesting that more knowledgeable consumers are likely to spend more on quality bottled wines. The study also found that consumers with greater knowledge were more likely to purchase wines at the cellar door, but were less likely to purchase from larger scale liquor stores or supermarkets.

Perrouy, d'Hauteville and Lockshin (2006) also considered the effects of wine knowledge and attribute selection during purchasing. Wine purchasers in France, Austria, Germany and the UK were surveyed in the study. Previous research had suggested that the region of origin equity was moderated by other wine attributes which appeared on the wine label; whilst their study concurred with this suggestion, Perrouy, d'Hauteville and Lockshin (2006) found that this moderating effect was more important to experts than to novices. The authors suggested that the importance of individual attributes such as region of origin, brand name or price decreases for more knowledgeable wine consumers, but that the combination of these attributes is used to a greater degree as wine knowledge increases.

Hypotheses

Much of the literature suggests that consumer product class knowledge is often measured by only considering the construct of subjective knowledge. Whilst this is usually done because subjective knowledge is easily to measure than objective knowledge, previous studies have suggested some level of correlation between the two constructs (Brucks, 1985; Rao & Monroe, 1988). Thus, we hypothesise that:

- H1** The level of objective wine knowledge is positively associated with the level of subjective wine knowledge.

Previous studies have supported the idea that both objective and subjective knowledge are related to product familiarity or experience (Park, Mothersbaugh, & Feick, 1994; Rao & Monroe, 1988). We hypothesise that:

- H2** The level of objective wine knowledge is positively associated with the level of wine familiarity.

Little previous research has considered the relationship between product class knowledge and the nationality of consumers. In this study, the four participating countries were very similar in terms of their culture, language and level of economic development. Three of the four countries have significant wine regions within their own borders, whilst the UK is close to the many wine producing regions in Europe. For these reasons we hypothesise that:

- H3** The level of objective knowledge is not related to the consumer's nationality.

Again, whilst there is evidence to suggest that gender has an impact on the consumer's information processing and purchase decision-making, there is no previous research to suggest that gender has any relationship with actual product class knowledge. In all four countries both males and females purchase and consume wine, and thus we hypothesise that:

- H4** The level of objective knowledge is not related to the consumer's gender.

Whilst no evidence from previous studies has been identified, it is likely that consumers with greater levels of education are more adept at searching for, retaining, and recalling information on a wide range of subjects. We therefore hypothesise that:

H5 The level of objective knowledge is positively associated with the consumer's level of education.

Previous research, using the product class of wine, has suggested that consumer knowledge has a relationship with the type of store in which they purchase wine. In particular it has been found that consumers with higher levels of wine knowledge are more likely to purchase in a specialty wine store (Mitchell & Hall, 2001) and are less likely to purchase at general liquor stores or supermarkets (Beverland, 2003). Both of these studies used a self-assessed measure of subjective knowledge. We thus hypothesise that:

H6 The level of objective knowledge will be associated with the store choice.

Methodology

In order to collect the data, wine purchasing consumers were surveyed in six cities in New Zealand, Australia, the UK and America by means of an interviewer administered questionnaire.

Wine knowledge was measured at both an objective and subjective level. A test, consisting of six questions pertaining to various aspects of wine knowledge with five possible answers for each, was developed to measure the consumer's objective knowledge of wine (see Appendix). The objective knowledge tool was pre-tested using expert and novice wine consumers to check for reliability. Wine subjective knowledge was measured by four items using 7-point Likert scales (from 'strongly disagree' to 'strongly agree'), adapted from previous validated research (Flynn & Goldsmith, 1999; Perrouy, d'Hauteville, & Lockshin, 2006). The subjective knowledge items (see Appendix) were found to be reliable when tested, with a Cronbach's Alpha result of .799. Familiarity or experience was measured using two Likert-scaled items (from 'never' to 'every day') recording the frequency of the consumer's wine drinking and purchasing behaviour. Demographic information was collected using categorical responses.

A total of 647 wine purchasers were approached, with 399 of these consumers agreeing to be interviewed (see Table 1). The interviews were conducted inside supermarkets, general liquor stores or specialty wine stores at various times of the day and various days of the week, over a seven-day timeframe in each city. Data was collected over a period from May to October 2007 and questionnaires were completed by the same interviewer. The collected data were analysed in SPSS using a series of one-way analysis of variance.

Table 1. Data Collection Details by City

	# Store Visits	Wine Purchasers	Respondents	Response Rate (%)
Christchurch	16	198	122	62
Auckland	14	138	92	67
Sydney	11	64	39	61
Melbourne	9	74	42	57
London	14	106	61	58
San Francisco	8	67	43	64
Total	72	647	399	62

Results

Sample analysis

Table 2 highlights the demographic characteristics of the sample. A range of ages were represented, whilst the gender of respondents was almost evenly split. The sample was well-educated, with over 50 percent of the holding an undergraduate or postgraduate qualification.

Table 2. Sample Demographics

	%
Male	51
Female	49
Age:	
18-24 years old	5
25-34 years old	15
35-44 years old	22
45-54 years old	25
55-64 years old	18
65+ years old	15
Education:	
High school	28
Trade / tech qualification	16
Undergraduate degree	31
Postgraduate degree	24

Hypotheses testing

H1 proposed that the level of objective wine knowledge is positively associated with the level of subjective wine knowledge. A statistically significant difference was found among the 25 levels of subjective knowledge on objective knowledge scores, $F(24,374) = 4.17$, $p = .000$. Figure 1 illustrates the relationship between the levels of subjective wine knowledge and the average objective knowledge scores. The general trend suggests that consumers' who self-assess their subjective level of wine knowledge to be high, also have a correspondingly high level of objective wine knowledge, thus H1 was supported.

Figure 1. Correlation Between Objective and Subjective Wine Knowledge

H2 postulated that the level of objective wine knowledge is positively associated with the level of wine familiarity. A statistically significant difference was found among the 7 levels of wine drinking frequency (from 'never' to 'every day') on objective knowledge, $F(6,392) = 2.52$, $p = .021$. Table 3 illustrates the mean of correct answers to the objective knowledge questions for each of the drinking frequency categories. This result thus supports H2.

Table 3. Objective Knowledge and Wine Drinking Frequency

Wine Drinking Frequency	Number	Mean
Never	3	2.3333
Up to 6 per year	3	1.6667
Monthly	12	3.3333
Fortnightly	16	3.0625
Weekly	127	3.2283
Most days	168	3.7262
Every day	70	3.5000

H3 proposed that the level of objective knowledge is not related to the consumer's nationality. However, a statistically significant difference was found among the four nationalities on objective knowledge, $F(3,395) = 2.76$, $p = .042$. Table 4 illustrates the relationship between the consumers' nationality and their average objective knowledge score. An LSD post hoc test indicated that significant differences existed between the objective knowledge of Australians compared to that of New Zealanders and Americans. There were no other significant differences between nationalities, thus partially supporting H3.

Table 4. Objective Knowledge and Nationality

Nationality	Number	Mean
New Zealand	214	3.4112
Australia	81	3.8025
United Kingdom	61	3.5246
USA	43	3.0000

H4 posed that the level of objective knowledge is not related to the consumer's gender. A statistically significant difference was found among gender on objective knowledge, $F(1,397) = 4.78$, $p = .029$. The mean objective knowledge score for males is 3.6275, compared to 3.2923 for females. Thus, H4 is not supported.

H5 proposed that the level of objective knowledge is positively associated to the consumer's level of education. A statistically significant difference was found among the four levels of education on objective knowledge, $F(3,395) = 9.466$, $p = .000$. An LSD post hoc test indicated that there were significant differences between the objective knowledge of consumers with high school or trade/tech qualifications, compared to those with undergraduate or postgraduate degrees. Consumers with high school and trade/tech qualifications were not significantly different from each other in terms of their objective wine knowledge, and neither were those consumers with undergraduate and postgraduate degrees. Table 5 illustrates the relationship between the level of education achieved by the consumers and their average objective knowledge scores, thus supporting H5.

Table 5. Objective Knowledge and Education

Highest Level of Education	Number	Mean
High School	113	3.0000
Trade / Tech qualification	65	3.1231
Undergraduate degree	124	3.6532
Postgraduate degree	97	3.9897

H6 postulated that the level of objective knowledge will be associated with the store choice. A statistically significant difference was found among the three store types on objective knowledge, $F(2,396) = 10.66$, $p = .000$. The mean objective knowledge score for supermarket customers was 3.3092, compared with 3.3617 for those purchasing in general liquor stores and 4.3214 for specialty wine store customers. An LSD post hoc test indicated no significant difference between the objective knowledge of supermarket and general liquor store customers, but both were significantly different from specialty wine store customers. Thus, H6 is partially supported.

Discussion and Implications

As suggested through the literature review, our research confirmed that the three constructs of consumer product knowledge (i.e. objective knowledge, subjective knowledge, and familiarity) are correlated, at least with regards to the product class of wine. The key finding was that the level of wine knowledge that was self-ascribed by consumers was positively related to their actual wine knowledge. The majority of previous research has only measured the single construct of subjective knowledge to indicate overall product class knowledge, and this finding provides empirical evidence that such a methodology is acceptable. Alongside the correlation between objective and subjective knowledge, the results also confirmed a relationship between objective knowledge and product familiarity. This finding suggests that the measurement of familiarity, in terms of purchase and consumption frequency, could also be used in future studies as an acceptable indicator of wine knowledge.

In addition, a positive relationship between the frequency of wine drinking and the level of wine knowledge was identified. Although causality was not examined in this study, it is feasible that higher levels of wine knowledge could result in increased consumption levels, as reported in previous research by Lin and Chen (2006). However, further research would be necessary to identify whether greater wine knowledge results in increased consumption or whether greater wine consumption causes increased product knowledge.

Other findings may have practical implications for wine producers and marketers. For example, the provision of detailed oenological information on wine labels may be more appropriate for the consumers in some international markets than in others. Similarly, complex labels may be more suitable for male wine consumers than for females. If wine marketers are targeting a specific product at female consumers, the labelling may need to reflect this demographic segments lower level of wine knowledge. Findings also suggest that the information and assistance which specialty wine store retailers provide should be tailored to match their customers' significantly higher levels of wine knowledge. In general, these findings suggest that the global wine market could be segmented on the basis of knowledge.

Limitations

Whilst adding to the consumer product class knowledge literature, this study is limited in that it only considered a single product class. This means that further examination of other product classes will be necessary in order to validate these findings. A further limitation is that the objectivity of the objective wine knowledge test that was developed by this study is questionable. Whilst care was taken to include a wide range of questions testing various aspects of wine knowledge, it could, nonetheless, be argued that consumers of one nationality

may be more likely to know the correct answer to a particular question than those consumers from another nation.

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Appendix

Objective Wine Knowledge Test:

1. Which of the following is a red wine?
Riesling Chardonnay Merlot Sauvignon Blanc Don't know
2. A peppery character is most associated with which wine?
Merlot Shiraz/Syrah Semillon Pinot Noir Don't know
3. Burgundy is the French term for which wine?
Shiraz/Syrah Pinot Noir Merlot Muscat Don't know
4. Which grapes are never used to make Champagne?
Chardonnay Riesling Pinot Noir Pinot Meunier Don't know
5. Which is not a famous French wine region?
Bordeaux Champagne Rheingau Alsace Don't know
6. What is the name of New Zealand's famed Sauvignon Blanc region?
Kapiti Hawkes Bay Waipara Marlborough Don't know

Subjective Wine Knowledge Test:

1. I don't understand much about wine
2. I am confident in my knowledge of wine
3. Among my friends, I am the wine expert
4. I know less about wine than others do